


**WEST** Generate Collection Print

L8: Entry 42 of 44

File: DWPI

Feb 14, 1981

DERWENT-ACC-NO: 1981-24573D  
DERWENT-WEEK: 198114  
COPYRIGHT 2002 DERWENT INFORMATION LTD

TITLE: Prepn. of hard butter for chocolate mfr. - from 2-oleo-di:stearin and  
2-oleo-di:palmitine using lipase

## PATENT-ASSIGNEE:

ASSIGNEE

FUJI OIL CO LTD

CODE

FUKO

PRIORITY-DATA: 1979JP-0091275 (July 17, 1979)

## PATENT-FAMILY:

| PUB-NO        | PUB-DATE          | LANGUAGE | PAGES | MAIN-IPC |
|---------------|-------------------|----------|-------|----------|
| JP 56015643 A | February 14, 1981 |          | 000   |          |
| JP 82028519 B | June 17, 1982     |          | 000   |          |

INT-CL (IPC): A23D 3/00; A23D 5/00; C11C 3/10

ABSTRACTED-PUB-NO: JP56015643A

## BASIC-ABSTRACT:

The method is characterised by ester-exchanging the mixed oil and fat which is prepared by combining the major components of 2-oleodistearin (I) and 2-oleodipalmitin (II) so that the proportion between constituting fatty acid groups, that is, palmitic acid:stearic acid is 0.4-1:1, in the reaction system of moisture content below 0.2 w/w% using the lipase showing 1,3-position specificity.

The starting mixed oil and fat has triglyceride content above 90% pref. above 93%. The lipase is that produced by *Rhizopus niveus*, *R. japonicus*, *Mucor japonicus*, *Aspergillus niger*, etc., pancreatic lipase, rice bran lipase, etc. can be used. The lipase is used 0.1-10 w/w% on the starting material and the enzymic ester exchange reaction is practiced at 20-60 deg.C for 10-48 hours.

Though the hard butter mainly of (I) and (II) has been widely used as the substitute for cacao fat, the chocolate prepared with it has been inferior to that prepared with cacao butter in thermal resistance, melting property in mouth, etc. By (a) controlling the composition of structuring fatty acids in starting oil and fat, (b) controlling the moisture content in the reaction system and (c) using the special lipase, the hard butter which is equal to cacao butter can be obtained.

TITLE-TERMS: PREPARATION HARD BUTTER CHOCOLATE MANUFACTURE OLEO DI STEARIN OLEO DI LIPASE

DERWENT-CLASS: D13

CPI-CODES: D03-C; D03-E07;

**WEST**

Generate Collection

Print

L8: Entry 38 of 44

File: DWPI

Jan 8, 1993

DERWENT-ACC-NO: 1993-049796

DERWENT-WEEK: 199718

COPYRIGHT 2002 DERWENT INFORMATION LTD

TITLE: Prepr. of whitening resistant fat compsn. for prodn. of curry roux - by ester exchanging fat and oil derived from palm oil and fatty acid contg. higher satd. fatty acid gp.

PATENT-ASSIGNEE:

ASSIGNEE

CODE

FUJI OIL CO LTD

FUKO

PRIORITY-DATA: 1991JP-0181880 (June 25, 1991)

PATENT-FAMILY:

| PUB-NO        | PUB-DATE        | LANGUAGE | PAGES | MAIN-IPC   |
|---------------|-----------------|----------|-------|------------|
| JP 05001297 A | January 8, 1993 |          | 004   | C11C003/10 |
| JP 2503811 B2 | June 5, 1996    |          | 004   | C11C003/10 |

APPLICATION-DATA:

| PUB-NO       | APPL-DATE     | APPL-NO        | DESCRIPTOR     |
|--------------|---------------|----------------|----------------|
| JP05001297A  | June 25, 1991 | 1991JP-0181880 |                |
| JP 2503811B2 | June 25, 1991 | 1991JP-0181880 |                |
| JP 2503811B2 |               | JP 5001297     | Previous Publ. |

INT-CL (IPC): A23D 9/00; A23D 9/007; A23L 1/39; A23L 1/40; C11C 3/10

ABSTRACTED-PUB-NO: JP05001297A

BASIC-ABSTRACT:

Fat and oil derived from palm oil and a fatty acid having a 22C satd. fatty acid gp. or its deriv. are ester-exchanged.

The deriv. of the acid is pref. at least one of fatty acid esters, triglycerides and alcohols. Pref. the compsn. has a compsn. of fatty acids contg. 35-55wt.% 16C satd. fatty acid gps. and 1-10wt.% 22C satd. fatty acid gps..



Pref., the ester exchange is effected e.g., with a metal catalyst, such as sodium methylate, or a lipase. The lipase includes *Rhizopus*, *Aspergillus*, *Mucol*, pancreatic and rice bran lipases. The enzymes are used in supported form. The support include diatomaceous earth, alumina and activated charcoal.

USE/ADVANTAGE - The compsn. is resistant to whitening and is esp. useful for a curry roux.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PREPARATION WHITE RESISTANCE FAT COMPOSITION PRODUCE CURRY ROUX ESTER EXCHANGE FAT OIL DERIVATIVE PALM OIL FATTY ACID CONTAIN HIGH SATURATE FATTY ACID GROUP

DERWENT-CLASS: D13 D23

**WEST**  Generate Collection

L10: Entry 10 of 14

File: USPT

Dec 12, 1989

DOCUMENT-IDENTIFIER: US 4886750 A

TITLE: Process for the preparation of a pharmaceutically active compound in a stereospecific form of the formula

Detailed Description Paragraph Right (35):

The final solution was analyzed on a preparative HPLC-SEC (size-exclusion chromatography) column (TSK 2000 SW, 600.times.21.5 mm) eluted with 0.1M sodium acetate pH 5.5 at a flow rate of 6 ml/min. From 10 minutes on column fractions of 2 ml were collected and tested for the presence of lipase and S-naproxen methyl esterase activity.

**WEST**

Generate Collection

Print

L8: Entry 39 of 44

File: DWPI

May 3, 1988

DERWENT-ACC-NO: 1988-140031  
DERWENT-WEEK: 198820  
COPYRIGHT 2002 DERWENT INFORMATION LTD

TITLE: Rice bran extrusion to reduce decomposition - using auger with inclined  
agitator bars at downstream end, rotated by DC motor

INVENTOR: MCPEAK, D L

## PATENT-ASSIGNEE:

ASSIGNEE

BRADY INT INC

CODE

BRADN

PRIORITY-DATA: 1986US-0859452 (May 5, 1986)

## PATENT-FAMILY:

| PUB-NO       | PUB-DATE          | LANGUAGE | PAGES | MAIN-IPC |
|--------------|-------------------|----------|-------|----------|
| US 4741264 A | May 3, 1988       |          | 009   |          |
| CN 1040494 A | March 21, 1990    |          | 000   |          |
| CN 1040495 A | March 21, 1990    |          | 000   |          |
| CN 8607712 A | November 18, 1987 |          | 000   |          |

## APPLICATION-DATA:

| PUB-NO      | APPL-DATE   | APPL-NO        | DESCRIPTOR |
|-------------|-------------|----------------|------------|
| US 4741264A | May 5, 1986 | 1986US-0859452 |            |

INT-CL (IPC): A23K 1/14; A23K 3/00; A23L 1/20; A23P 1/12

ABSTRACTED-PUB-NO: US 4741264A

## BASIC-ABSTRACT:

Rice bran is processed in an extruder which heats the bran. The extruder has a rotor whose free end projects beyond a shell at its downstream region where a conical extrusion aperture is defined between the rotor and shell. The rotor has at least four turns to its flights. It also has at least 12 agitator bars attached to its downstream end. The agitator bars are angled to the axis of the rotor but at a smaller angle than that of the flights.

The rotor is driven by a direct current motor connected via a clutch which slips when a predetermined torque is applied. Typically the motor rotates at 885 rpm at a power of 75 hp.

USE/ADVANTAGE - The appts. heats rice bran to inactivate lipase and destroy bacteria and stabilise free acid in the bran. The life of the bran is extended by the treatment.

CHOSEN-DRAWING: Dwg.0/3

TITLE-TERMS: RICE BRAN EXTRUDE REDUCE DECOMPOSE AUGER INCLINE AGITATE BAR DOWNSTREAM  
END ROTATING DC MOTOR

**WEST**

Generate Collection

Print

L8: Entry 37 of 44

File: DWPI

Jan 18, 1996

DERWENT-ACC-NO: 1993-046911  
DERWENT-WEEK: 199608  
COPYRIGHT 2002 DERWENT INFORMATION LTD

TITLE: Prepn of hard stocks for use in margarine and shortening - by allowing lipase to act on mixt. of palm type oils, lauric type oils and behenic acid (ester(s))

INVENTOR: EBIHARA, Y; MIYABE, M ; NAGOH, A

PATENT-ASSIGNEE:

ASSIGNEE

FUJI OIL CO LTD

CODE

FUKO

PRIOPITY-DATA: 1991JP-0194857 (July 8, 1991)

PATENT-FAMILY:

| PUB-NO        | PUB-DATE          | LANGUAGE | PAGES | MAIN-IPC   |
|---------------|-------------------|----------|-------|------------|
| DE 69206512 E | January 18, 1996  |          | 000   | A23D007/00 |
| EP 526980 A1  | February 10, 1993 | E        | 011   | A23D007/00 |
| JP 05345900 A | December 27, 1993 |          | 005   | C11C003/10 |
| US 5304477 A  | April 19, 1994    |          | 005   | C12P007/64 |
| EP 526980 B1  | December 6, 1995  | E        | 011   | A23D007/00 |

DESIGNATED-STATES: BE DE GB NL BE DE GB NL

CITED-DOCUMENTS:2.Jnl.Ref; EP 151450 ; EP 170431 ; EP 427309 ; FR 2570388 ; JP57074041 ; JP58094345 ; US 3949105 ; 02Jnl.Ref

APPLICATION-DATA:

| PUB-NO      | APPL-DATE     | APPL-NO        | DESCRIPTOR |
|-------------|---------------|----------------|------------|
| DE69206512E | June 26, 1992 | 1992DE-0606512 |            |
| DE69206512E | June 26, 1992 | 1992EP-0305918 |            |
| DE69206512E |               | EP 526980      | Based on   |
| EP 526980A1 | June 26, 1992 | 1992EP-0305918 |            |
| JP05345900A | July 8, 1991  | 1991JP-0194857 |            |
| US 5304477A | July 2, 1992  | 1992US-0907850 |            |
| EP 526980B1 | June 26, 1992 | 1992EP-0305918 |            |

INT-CL (IPC): A23D 7/00; C11C 3/10; C12N 1/14; C12N 9/20; C12P 7/64

ABSTRACTED-PUB-NO: EP 526980A

BASIC-ABSTRACT:

Prodn. of hard stocks comprises allowing a lipase to act on a mixt. of palm type oils, lauric type oils, and behenic acid (or esters of these) for interesterification.

Pref. mixt. has a fatty acid compsn. of lauric acid (6-25%), palmitic acid (23-48%) and behenic acid (0.5-5%). The palm type oils are selected from palm oil, fractionated oils, and hardened oils of these. The lauric type oils are selected from palm kernel

oil, coconut oil, babassu oil, fractionated oils, or hardened oils thereof. The lipase is selected from lipases derived from the genus *Rhizopus*, *Aspergillus* or *Mucor*, pancreatic lipase and rice bran lipase.

USE/ADVANTAGE - The hard stocks produced are useful as raw materials for plastic fat prods. such as margarine and shortening. The starting materials for the process are abundant and inexpensive. Using the process it is possible to (a) prevent exudation of liquid oils contained in the prods. with temp. increase, (b) inhibit a rise in the m.pt. caused by an increase in the amt. of tri-satd. triglycerides, and (c) to solve the problem of product-hardening over long-term stora

ABSTRACTED-PUB-NO:

EP 526980B

EQUIVALENT-ABSTRACTS:

A process for producing hard fats comprising reacting a 1,3-specific lipase with a mixt. of an oil having a palmitic acid content of at least 30%, an oil having a lauric acid content of at least 30% and free behenic acid or its ester with a monohydric or polyhydric alcohol, the mixt. having a fatty acid compsn. of 6-25% lauric acid, 23-48% palmitic acid and 0.5-5% behenic acid, based on the wt. of the mixt. to produce the hard fat and recovering the hard fat.

US 5304477A

Prod. of hard fits comprises reacting a 1,3-specific lipase with a mixt. of an oil with a palmitic acid content of at least 30%, an oil with a lauric acid content of at least 30%, and free behenic acid or its ester with a mono- or polyhydric alcohol. The mixt. comprises a fatty acid compsn. of 6.25% lauric acid, 23-48% palmitic acid and 0.5-5% behenic acid, based on the wt. of the mixt. to produce the fat and recover it. The lipase is obtd. from a microorganism of the genus *Rhizopus*, *Aspergillus* or *Mucor* or the lipase in a pancreatic lipase or rice bran lipase.

USE/ADVANTAGE - Hard stocks have been produced with excellent characteristics for use as raw materials of plastic fat prods. such as margarine and shortening.

CHOSEN-DRAWING: Dwg.0/0 Dwg.0/0 Dwg.0/0

TITLE-TERMS: PREPARATION HARD STOCK MARGARINE SHORTENING ALLOW LIPASE ACT MIXTURE PALM TYPE OIL LAURIC TYPE OIL BEHENIC ACID ESTER

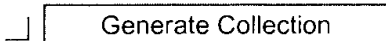
DERWENT-CLASS: D13 D16 D23

CPI-CODES: D03-C;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0121U; 1147U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1993-021119

**WEST**Generate CollectionPrint

L10: Entry 4 of 14

File: USPT

Jan 5, 1999

DOCUMENT-IDENTIFIER: US 5856451 A

TITLE: Method for reducing respiratory allergenicity

Detailed Description Paragraph Right (260):

25 mg of *Candida antarctica* lipase B in 25 ml of 0.1 M borate, 1M NaCl, pH 9.2, was incubated with 2.82 gram of mPEG 15.000 activated with Tresyl chloride according to Example 2 for 3 hours at ambient temperature. The reaction was stopped by addition of 1 ml 2M Glycine and the derivative purified by size-exclusion chromatography (Spherogel TSK-G2000 SWG).

**WEST**[Generate Collection](#)[Print](#)

L10: Entry 3 of 14

File: USPT

Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5981718 A

TITLE: Polypeptide with reduced allergenicity

Detailed Description Paragraph Right (274):

25 mg of *Candida antarctica* lipase B in 25 ml of 0.1 M borate, 1 M NaCl, pH 9.2, was incubated with 2.82 gram of mPEG 15.000 activated with Tresyl chloride according to Example 2 for 3 hours at ambient temperature. The reaction was stopped by addition of 1 ml 2M Glycine and the derivative purified by size-exclusion chromatography (Spherogel TSK-G2000 SWG).



**WEST****End of Result Set**☐  

L10: Entry 14 of 14

File: EPAB

Nov 28, 1995

DOCUMENT-IDENTIFIER: US 5470741 A

TITLE: Mutant of Geotrichum candidum which produces novel enzyme system to selectively hydrolyze triglycerides

Abstract (1):

A mutant fungal strain, namely G. candidum NRRL Y-552, mutant known as Henkel 9-2-3-9 (ATCC 74170) produces a lipase called "UNLipase" providing a selectivity of 25:1 for oleic acid over palmitic acid by the assay procedure employed. UNLipase has a temperature range of operation of between 0 and 40 degrees Celsius (and no activity over 55 degrees Celsius). The optimum pH ranges are between 7.5 and 8.5. Magnesium cations increase activity, whereas calcium cations are inhibitory. The molecular weight of the protein appears to be 65 kDa by size exclusion chromatography. UNLipase shows a high degree of selectivity for hydrolysis, esterification and transesterification.

**WEST****Freeform Search**

Database:

US Patents Full-Text Database  
 US Pre-Grant Publication Full-Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

12 same 19

Term:

Display: 10 Documents in Display Format: - Starting with Number 20

Generate: ☐ Hit List ☒ Hit Count ☐ Side by Side ☐ Image

Search

Clear

Help

Logout

Interrupt

Main Menu

Show 8 Numbers

Edit 8 Numbers

Preferences

Cases

**Search History**DATE: Monday, June 24, 2002 [Printable Copy](#) [Create Case](#)Set Name  
side by sideQueryHit Count Set Name  
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

|            |                               |       |            |
|------------|-------------------------------|-------|------------|
| <u>L10</u> | 12 same 19                    | 14    | <u>L10</u> |
| <u>L9</u>  | size exclusion chromatography | 4514  | <u>L9</u>  |
| <u>L8</u>  | 11 near5 12                   | 44    | <u>L8</u>  |
| <u>L7</u>  | 11 near10 12                  | 63    | <u>L7</u>  |
| <u>L6</u>  | 11 5a 12                      | 0     | <u>L6</u>  |
| <u>L5</u>  | 14 and 12                     | 6     | <u>L5</u>  |
| <u>L4</u>  | benzene boronic acid          | 87    | <u>L4</u>  |
| <u>L3</u>  | 11 same 12                    | 98    | <u>L3</u>  |
| <u>L2</u>  | lipase                        | 14676 | <u>L2</u>  |
| <u>L1</u>  | rice bran                     | 6073  | <u>L1</u>  |

END OF SEARCH HISTORY

=> d his

(FILE 'HOME' ENTERED AT 16:49:33 ON 24 JUN 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 16:49:59 ON 24 JUN 2002

L1           48 S BENZENE BORONIC ACID?  
L2           88043 S LIPASE?  
L3           15 S L1 AND L2  
L4           10 DUP REM L3 (5 DUPLICATES REMOVED)

=>

Welcome to STN International! Enter x:x

LOGINID:ssspta1815mxw

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\* \* \* \* \* Welcome to STN International \* \* \* \* \*

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
NEWS 2 Jan 25 BLAST(R) searching in REGISTRY available in STN on the Web  
NEWS 3 Jan 29 FSTA has been reloaded and moves to weekly updates  
NEWS 4 Feb 01 DKILIT now produced by FIZ Karlsruhe and has a new update  
frequency  
NEWS 5 Feb 19 Access via Tymnet and SprintNet Eliminated Effective 3/31/02  
NEWS 6 Mar 08 Gene Names now available in BIOSIS  
NEWS 7 Mar 22 TOXLIT no longer available  
NEWS 8 Mar 22 TRCTHERMO no longer available  
NEWS 9 Mar 28 US Provisional Priorities searched with P in CA/CAPLUS  
and USPATFULL  
NEWS 10 Mar 28 LIPINSKI/CALC added for property searching in REGISTRY  
NEWS 11 Apr 02 PAPERCHEM no longer available on STN. Use PAPERCHEM2  
instead.  
NEWS 12 Apr 08 "Ask CAS" for self-help around the clock  
NEWS 13 Apr 09 BEILSTEIN: Reload and Implementation of a New Subject Area  
NEWS 14 Apr 09 ZDB will be removed from STN  
NEWS 15 Apr 19 US Patent Applications available in IFICDB, IFIPAT, and  
IFIUDB  
NEWS 16 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and  
ZCAPLUS  
NEWS 17 Apr 22 BIOSIS Gene Names now available in TOXCENTER  
NEWS 18 Apr 22 Federal Research in Progress (FEDRIP) now available  
NEWS 19 Jun 03 New e-mail delivery for search results now available  
NEWS 20 Jun 10 MEDLINE Reload  
NEWS 21 Jun 10 PCTFULL has been reloaded  
  
NEWS EXPRESS February 1 CURRENT WINDOWS VERSION IS V6.0d,  
CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),  
AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002  
  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS INTER General Internet Information  
NEWS LOGIN Welcome Banner and News Items  
NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that  
specific topic.

All use of STN is subject to the provisions of the STN Customer  
agreement. Please note that this agreement limits use to scientific  
research. Use for software development or design or implementation  
of commercial gateways or other similar uses is prohibited and may  
result in loss of user privileges and other penalties.

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 16:49:33 ON 24 JUN 2002

=> file ca, biosis, medline  
COST IN U.S. DOLLARS

FULL ESTIMATED COST

| SINCE FILE | TOTAL   |
|------------|---------|
| ENTRY      | SESSION |
| 0.21       | 0.21    |

FILE 'CA' ENTERED AT 16:49:59 ON 24 JUN 2002  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'BIOSIS' ENTERED AT 16:49:59 ON 24 JUN 2002  
COPYRIGHT (C) 2002 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'MEDLINE' ENTERED AT 16:49:59 ON 24 JUN 2002

=> s benzene boronic acid?  
L1 48 BENZENE BORONIC ACID?

=> s lipase?  
L2 88043 LIPASE?

=> s l1 and l2  
L3 15 L1 AND L2

=> dup rem l3  
PROCESSING COMPLETED FOR L3  
L4 10 DUP REM L3 (5 DUPLICATES REMOVED)

=> d 1-10 ab, bib

L4 ANSWER 1 OF 10 CA COPYRIGHT 2002 ACS DUPLICATE 1  
AB We have investigated the binding properties of and dynamics in Humicola  
lanuginosa **lipase** (H11) and the inactive mutant S146A (active  
Ser146 substituted with Ala) using fluorescence spectroscopy and mol.  
dynamics simulations, resp. H11 and S146A show significantly different  
binding behavior for phosphatidylcholine (PC) and phosphatidylglycerol  
(PG) liposomes. Generally, higher binding affinity is obsd. for H11 than  
the S146A mutant. Furthermore, depending on the matrix, the addn. of the  
transition state analog **benzene boronic acid**  
increases the binding affinity of S146A, whereas only small changes are  
obsd. for H11 suggesting that the active site lid in the latter opens  
more easily and hence more **lipase** mols. are bound to the liposomes.  
These observations are in agreement with mol. dynamics simulations and  
subsequent essential dynamics analyses. The results reveal that the  
hinges of the active site lid are more flexible in the wild-type H11 than  
in S146A. In contrast, larger fluctuations are obsd. in the middle  
region of the active site loop in S146A than in H11. These findings reveal that  
the single mutation (S146A) of the active site serine leads to  
substantial conformational alterations in the H. lanuginosa **lipase** and  
different binding affinities.  
AN 129:213471 CA  
TI Active Serine Involved in the Stabilization of the Active Site Loop in  
the

- Humicola lanuginosa **Lipase**
- AU Peters, G. H.; Svendsen, A.; Langberg, H.; Vind, J.; Patkar, S. A.;  
Toxvaerd, S.; Kinnunen, P. K. J.
- CS Chemistry Department III H.C. Orsted Institutet, University of  
Copenhagen,  
Copenhagen, DK-2100, Den.
- SO Biochemistry (1998), 37(36), 12375-12383  
CODEN: BICHAW; ISSN: 0006-2960
- PB American Chemical Society
- DT Journal
- LA English
- L4 ANSWER 2 OF 10 CA COPYRIGHT 2002 ACS
- AB Incubation of smooth muscle cells (SMC) with increasing concn. of  
normolipidemic human very low-d. lipoproteins (N-VLDL) for 24 h has no  
effect on the lipid content of SMC; however, the cellular triglyceride  
(TG) and cholesteryl ester (CE) increased substantially after incubation  
for 48 or 72 h even with lower concentrations of VLDL. On the contrary,  
macrophage-conditioned media with comparable N-VLDL stimulated  
accumulation of TG and CE in SMC after 24 h incubation and this effect  
was  
concn.-dependent. **Benzene boronic acid**  
(BBA), a specific inhibitor of lipoprotein **lipase** (LPL),  
attenuated the deposition of TB in SMC, while heparin enhanced it. Addn.  
of oleate-albumin complex to the media had an effect similar to  
macrophage-conditioned media. With regard to the CE, BBA promoted while  
heparin decreased its accumulation in SMC incubated with  
macrophage-conditioned media. The authors suggest: (1) macrophages  
stimulate TG accumulation in SMC through the hydrolysis of VLDL-TG to  
free  
fatty acids, which are reesterified to TG in SMC; (2) Uptake of VLDL-CE  
by  
SMC is enhanced by macrophages through conversion of N-VLDL to its  
remnant  
or LDL.
- AN 117:210004 CA
- TI Macrophages stimulate the uptake of lipid in N-VLDL by rabbit aorta  
smooth  
muscle cells
- AU Wang, Yanfeng; Wang, Shiping; Feng, Zhongchen; Jiang, Weiguo; Yuan,  
Fangmin
- CS Dep. Biochem., Tongji Med. Univ., Wuhan, 430030, Peop. Rep. China
- SO Shengwu Huaxue Yu Shengwu Wuli Xuebao (1992), 24(1), 33-9  
CODEN: SHWPAU; ISSN: 0582-9879
- DT Journal
- LA Chinese
- L4 ANSWER 3 OF 10 MEDLINE
- AB Macrophages were incubated with 125I-VLDL for 5 h in presence or absence  
of lipoprotein **lipase** (LPL) inhibitor, **benzene**  
**boronic acid** (BBA). Both the uptake and degradation of  
125I-VLDL by macrophages were saturable, and the uptake and degradation  
curves were virtually identical. When macrophages were incubated with  
125I-VLDL for 10 h in presence of BBA, the uptake and degradation of  
125I-VLDL were still saturable. However, in absence of BBA, the uptake  
and  
degradation were no longer saturable. The results suggest that with  
macrophages incubated with VLDL for a shorter period, VLDL was taken up  
predominantly via receptor pathway, with a longer period of incubation,  
LPL played a striking role in uptake of VLDL.

AN 91341857 MEDLINE  
DN 91341857 PubMed ID: 1875451  
TI Relationship of VLDL receptor and LPL in metabolism of VLDL by macrophage.  
AU Deng Y Z; Feng Z C; Wang H X; Jiang W G; Zhong Y Q; Wang C F  
CS Department of Biochemistry, Tongji Medical University, Wuhan.  
SO JOURNAL OF TONGJI MEDICAL UNIVERSITY, (1991) 11 (1) 39-44.  
Journal code: 8605495. ISSN: 0257-716X.  
CY China  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 199109  
ED Entered STN: 19911013  
Last Updated on STN: 19911013  
Entered Medline: 19910925

L4 ANSWER 4 OF 10 CA COPYRIGHT 2002 ACS DUPLICATE 2  
AB Bile-salt-stimulated human milk **lipase** catalyzes both the hydrolysis of retinyl palmitate and the esterification of retinol by palmitic acid. The equil. const.,  $K = 2.82 \text{ mM}$ , obtained from the ratio of the rate consts. of these two reactions, favors the formation of the ester. Sodium taurocholate stimulates the enzyme-catalyzed hydrolysis reaction but has no effect on the enzyme-catalyzed acyl transfer reaction.

**Benzene boronic acid** serves as an inhibitor of both reactions and is an excellent model for probing the active site of bile-salt-stimulated human milk **lipase**. The kinetic parameters have been evaluated and comparisons have been drawn between bile-salt-stimulated human milk **lipase** and other serine hydrolases.

AN 113:167868 CA  
TI **Benzene boronic acid** inhibition of vitamin A-bile-salt-stimulated human milk **lipase** interactions  
AU O'Connor, Charmian J.; Butler, Paul A. G.; Yaghi, Basma M.  
CS Dep. Chem., Univ. Auckland, Auckland, N. Z.  
SO J. Mol. Catal. (1990), 60(2), 255-65  
CODEN: JMCADS; ISSN: 0304-5102  
DT Journal  
LA English

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AB Resonance energy transfer has been used to identify the interaction of N-(5-dimethylaminonaphthalene-1-sulfonyl)-3-aminobenzene boronic acid (**dansyl-benzene boronic acid**) with bile-salt-stimulated human milk **lipase**, BSSL, and a binding constant  $K_a = 8.6 \times 10^6 \text{ M}^{-1}$  was measured. **Benzene boronic acid** competitively displaces **dansyl-benzene boronic acid** from the enzyme,  $K_i = 42 \text{ } \mu\text{M}$ . It is suggested that boronic acids may serve as useful probes for the active site of BSSL.

AN 1989:446881 BIOSIS  
DN BA88:95153  
TI N-5 DIMETHYLAMINONAPHTHALENE-1-SULFONYL-3-AMINO BENZENE BORONIC ACID AS AN ACTIVE-SITE-DIRECTED FLUORESCENT PROBE OF BILE-SALT-STIMULATED HUMAN MILK **LIPASE**.  
AU O'CONNOR C J; YAGHI B M  
CS DEP. CHEM., UNIV. AUCKLAND, PRIVATE BAG, AUCKLAND, NEW ZEALAND.  
SO J MOL CATAL, (1989) 52 (3), 317-322.

- CODEN: JMCADS. ISSN: 0304-5102.
- FS BA; OLD  
LA English
- L4 ANSWER 6 OF 10 CA COPYRIGHT 2002 ACS  
AB Culturing of isolated mouse peritoneal macrophages in the presence of rabbit very-low-d. lipoprotein (VLDL) caused a 6-16-fold increase in the macrophage content of triglycerides (TG). On addn. of **benzene boronic acid** (BBA), a lipoprotein **lipase** (LPL) inhibitor, the medium content of free fatty acids decreased and that of VLDL-TG increased, whereas the accumulation of TG in the cells was greatly diminished or completely suppressed. Thus, LPL appears to play an important role in macrophage metab. of VLDL-TG.
- AN 111:75306 CA  
TI The role of lipoprotein **lipase** in the metabolism of normal very-low-density lipoprotein by macrophages  
AU Feng, Youmei; Wang, Shiping; Wu, Wansheng; Wang, Chunben; An, Chengren; Jiang, Weiguo; Feng, Zongchen  
CS Dep. Biochem., Tongji Med. Univ., Wuhan, Peop. Rep. China  
SO Shengwu Huaxue Zazhi (1989), 5(3), 255-9  
CODEN: SHZAE4; ISSN: 1000-8543  
DT Journal  
LA Chinese
- L4 ANSWER 7 OF 10 CA COPYRIGHT 2002 ACS DUPLICATE 3  
AB The lipoprotein **lipase** (LPL) inhibitor **benzene boronic acid** (BBA) demonstrated that LPL plays a major role in the accumulation of triglycerides (TG) in mouse peritoneal macrophages exposed to rabbit normal very low d. lipoproteins (N-VLDL). There were less free fatty acids (FFA) and much more N-VLDL-TG left in the media contg. BBA than in the controls. TG accumulation in the cells was greatly diminished or even prohibited by BBA. Thus, LPL played a more important role than the receptor did in the uptake of N-VLDL-TG by mouse macrophages. The mechanisms of LPL action were discussed.
- AN 111:229520 CA  
TI The role of lipoprotein **lipase** in metabolism of normolipidemic very low density lipoprotein by macrophages  
AU Wang, Shiping; Feng, Youmei; Feng, Zongchen; Wu, Wansheng; Wang, Chunben; An, Chengren; Jiang, Weiguo  
CS Dep. Biochem., Tongji Med. Univ., Wuhan, Peop. Rep. China  
SO J. Tongji Med. Univ. (1989), 9(1), 48-52  
CODEN: JTMUEI; ISSN: 0257-716X  
DT Journal  
LA English
- L4 ANSWER 8 OF 10 MEDLINE  
AB Resonance energy transfer was used to monitor the interaction of an active-site-directed fluorescent inhibitor, N-(5-dimethylaminonaphthalene-1-sulfonyl)-3-aminobenzene boronic acid, and lipoprotein **lipase** (EC 3.1.1.34). The binding of this probe to the active site of lipoprotein **lipase** had an association constant,  $K_a$ , of  $1.1 \times 10^6 \text{ M}^{-1}$ , indicating a strong interaction. The binding was displaced competitively by **benzene boronic acid**. The method described provides a sensitive procedure to probe the active site of lipoprotein **lipase**.
- AN 83283512 MEDLINE



DN 83283512 PubMed ID: 6882771  
 TI N-(5-dimethylaminonaphthalene-1-sulfonyl)-3-aminobenzene boronic acid as  
 an active-site-directed fluorescent probe of lipoprotein **lipase**.  
 AU Vainio P  
 SO BIOCHIMICA ET BIOPHYSICA ACTA, (1983 Aug 16) 746 (3) 217-9.  
 Journal code: 0217513. ISSN: 0006-3002.  
 CY Netherlands  
 DT Journal; Article; (JOURNAL ARTICLE)  
 LA English  
 FS Priority Journals  
 EM 198310  
 ED Entered STN: 19900319  
 Last Updated on STN: 19900319  
 Entered Medline: 19831008

L4 ANSWER 9 OF 10 CA COPYRIGHT 2002 ACS DUPLICATE 4  
 AB The catalytic mechanism of triacylglycerol hydrolysis by lipoprotein  
**lipase** (I) was studied. I was inhibited by benzenboronic acid  
 (II) with an apparent  $K_i$  of 8.9  $\mu\text{M}$  at pH 7.4, indicating the presence  
 of serine and histidine in the enzyme active site. Inhibition of I by II  
 was apparently due to the formation of an inhibitor-enzyme complex having  
 analogous bonding to the active site histidine and serine as the  
 transition-state complex which precedes the formation of an obligatory  
 acyl-enzyme intermediate. The presence of apolipoprotein C-II, the  
 apolipoprotein activator of I, partly reversed the inhibition by II.

This reversal by apolipoprotein C-II had a distinct pH optimum in the range  
 8-9.

AN 97:35268 CA  
 TI Inhibition of lipoprotein **lipase** by **benzene**  
**boronic acid**. Effect of apolipoprotein C-II  
 AU Vainio, Petri; Virtanen, Jorma A.; Kinnunen, Paavo K. J.  
 CS Dep. Med. Chem., Univ. Helsinki, Helsinki, SF-00170/17, Finland  
 SO Biochim. Biophys. Acta (1982), 711(3), 386-90  
 CODEN: BBACAQ; ISSN: 0006-3002  
 DT Journal  
 LA English

L4 ANSWER 10 OF 10 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1981:111190 BIOSIS  
 DN BR21:46186  
 TI BINDING OF 7 NITROBENZO-2-OXA-1 3-DIAZOLYL-M-AMINO **BENZENE**  
**BORONIC-ACID** TO PANCREATIC **LIPASE** IN THE  
 PRESENCE OF DETERGENT MICELLES.  
 AU GARNER C W  
 CS BIOCHEM. DEP., TEXAS TECH UNIV. HEALTH SCI. CENT. LUBBOCK, TX 79430.  
 SO 72ND ANNUAL MEETING OF THE AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, ST.  
 LOUIS, MO., USA, MAY 31-JUNE 4, 1981. FED PROC. (1981) 40 (6), 1864.  
 CODEN: FEPA7. ISSN: 0014-9446.  
 DT Conference  
 FS BR; OLD  
 LA English

=> d his

(FILE 'HOME' ENTERED AT 16:49:33 ON 24 JUN 2002)

FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 16:49:59 ON 24 JUN 2002  
 L1 48 S BENZENE BORONIC ACID?

L2 88043 S LIPASE?  
L3 15 S L1 AND L2  
L4 10 DUP REM L3 (5 DUPLICATES REMOVED)